

**Responses to BRAC Cleanup Team (BCT) Comments on the
Former Naval Station Treasure Island
Draft TI Basewide Radiological Management Work Plan (April 2013)**

REVIEW COMMENTS – Department of Toxics Substance Control (DTSC) dated May 17, 2013		
No.	Comments	Responses
SPECIFIC COMMENTS		
1.1	Executive Summary, Page ES-1, First Paragraph. Please make the title of the document in the cover page and in the text consistent; the cover page says "Basewide Radiological Management Work Plan" while the text says "Plan" instead of Work Plan. The document should be entitled "Basewide Radiological Investigation Work Plan" since it does not involve the management of radiological materials or wastes. The purpose of the work plan is to perform screening radiological surveys to determine the next path for clearance or free release of impacted areas.	The title of the document will be made consistent throughout and will be retitled to Radiological Management Plan.
1.2.	Executive Summary, Page ES-1, Third Paragraph. The Conceptual Site Models (CSMs) should provide more information on repair/solid waste disposal operations. What kinds of repairs were conducted at the site that could be the sources of radiological contamination? The CSM should include soil grading during construction of the Navy housing that moved the radiological contaminants from the solid waste disposal areas (SWDA) to adjacent areas.	Information summarizing the HRA and draft HRA-STM, including discussion regarding the CSMs, has been removed from the document with the exception of details pertinent to the present ITSI Gilbane work scope. Those details are found in a restructured Section 2.0. Final basewide site conceptual models will be included in the draft HRA-STM and not in this projects work plan.
1.3.	Executive Summary, Page ES-2, Fourth Paragraph. Please clarify that a Final Status Survey (FSS) report will follow the radiological survey report for free release or closure of an impacted site. Please discuss the process for an impacted area to obtain a free release from the regulatory agencies. A process flowchart should be included.	Text in Section 12.3, Survey Report, was clarified to explicitly state that survey results – whether scoping, characterization, or FSS – will be reported. Data will be reported and evaluated to determine whether the site should continue to be investigated or has been characterized adequately to attain free release. The Navy BRAC works regularly with RASO and CDPH to determine these processes.
2.1	Section 1.1 – Objective, Page 1, Second bullet Please clarify if a separate further characterization work plan and/or remediation plan will be developed for agency review.	Separate plans are not anticipated at this time. If conclusions from this data collection effort indicate that further characterization or further remediation is required then appropriate work plans will be

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		prepared and submitted to the BCT for review.
2.2.	Section 1.1 – Objective, Page 1, Last paragraph Please discuss the activities that may not follow MARSIMM guidelines.	Activities generally follow MARSSIM; however, the Navy reminds reviewers that MARSSIM is a guidance document.
3.	Section 1.2 – Scope, Page 2, and Section 4.3.2 – Radiation Protection, Page 20 The Radiation Protection Plan (RPP) is not in Appendix C, and was not included in the Table of Contents of the Work Plan. Appendix C includes the Stormwater Pollution Prevention Plan. Please include the RPP in the Work Plan.	The final document will be inclusive of all attachments including the RPP and Health and Safety documents. The appendices list will be updated to correctly reflect each appendix in sequence.
4.	Section 2.2 - Radiologically Impacted Areas, Page 3 Thirteen locations were identified as radiologically impacted. Please include a list of these areas and a brief description of each area as to why they were classified as impacted. Will a Task-Specific Plan be prepared for each area?	See response to DTSC comment 1.2. As described in RMP Section 4.3.1, TSPs will be prepared for individual site- and/or task-specific activities warranting guidance beyond that provided in the RMP. The TSP will provide relevant location-specific data and identify variances and/or additions to the RMP.
5.	Figure 2.1 - Radiologically Impacted Areas, Page 5 This figure should include all impacted areas identified in the draft Historical Radiological Assessment Supplemental Technical Memorandum (HRASTM). The following should be identified as impacted in Figure 2.1: Building 233 and associated sewer and storm drain lines; the area surrounding Building 461; the area behind Building 342; and other impacted areas at Site 12 (SWDAs, gyro shop, and debris areas). A revised Figure 2.1 of the Work Plan was provided on May 13, 2013 showing areas that will be worked on by ITSI under its contract with the Navy. Another figure should be included showing all impacted areas since these areas and recommended actions are discussed in Section 2.4-Conceptual Site Models.	The revised Figure 2.1 showing areas that will be worked by ITSI Gilbane under its contract is the figure that will be used. Regarding additional impacted areas, see response to DTSC Comment #1.2.

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6.	Section 2.4 - Conceptual Site Models, Page 6. The CSMs should include all the CSMs in the draft HRASTM. The CSM for releases from spills into the sewer and storm drain lines should be included.	See response to DTSC Comment #1.2.
7.	Table 2.1, Page 7. Building 3, Recommended Action: Please clarify that the scoping surveys will be conducted throughout Building 3 and not just at the former optical repair shop since significant waste may have been generated during ship repair activities at this building.	Table 2.1 has been deleted; however, a scoping survey will be performed of the entire Building 3. See response to DTSC Comment #1.2.
8.	Section 3.1.3-US. Environmental Protection Agency, Page 12. Please clarify that the USEPA also defaults the clearance of open areas to the state.	Text revised to state that the EPA defaults the radiological clearance of buildings, outdoor structures, and open areas at the former NSTI to the CDPH.
9.	Section 4.3.3 - Health and Safety, Page 20. This section states that the Health and Safety Plan is found in Volume II of this document. Please revise this statement since the Work Plan does not have Volume II.	The Final Work Plan will have two volumes. The second volume will include the RPP and Safety documents.
10.	Section 4.3.5 - Environmental Protection, Page 21. This section states that environmental protection will be implemented in accordance with the plans found in Appendices D through F. Please revise this statement since these appendices do not include the plans listed in the following bullet items.	Text has been revised to remove reference to the plans as appendices.
11.	Section 6.7.1 - Action Levels and Section 6.7.2-Investigation, Page 36. Section 6.7.1 states that action levels, established in the Data Quality Objectives (DQOs), are specific levels of radioactivity used to indicate when additional investigation may be necessary. Please discuss how the action levels are different	To avoid confusion, the terms ‘action level’ and ‘investigation level’ have been replaced with ‘radiological screening criteria.’ Data investigations are now called data evaluations.

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	from the screening criteria in Table 3.1 on page 14. The DQOs in section 5.0 does not include the action levels. How are the actions levels established?	
12.	Section 6.7.5 - Resurvey, Page 37. This section states "Other than increasing surface scan coverage to 100 percent of the survey area, a complete resurvey of Class 2 survey unit determined to be a Class 1 survey is not necessary provided remediation is not performed." Please clarify this statement.	From an FSS data collection perspective, the only different between a Class 1 and Class 2 survey unit is the scan coverage since both survey units use a random-start, systematic sampling pattern to collect soil samples and/or static measurements. When a Class 2 survey unit is reclassified as a Class 1 survey unit, the scan coverage is increased to 100%. The original random-start systematic pattern remains sufficient for sample/measurement collection, provided no remediation is performed.
13.	Section 7.0 - Field Implementation, Pages 39 and 40. The introduction states that site-specific activities will be documented in the Task Specific Plan (TSP) and section 7.3 states that areas requiring field activities will have a TSP developed. Please clarify when or what point in the radiological investigation process will the TSP be developed? Will there be separated TSPs for each new area requiring field activities?	See response to DTSC Comment #4.
14.	Section 11.2 - Liquid Waste, Pages 53 and 54. The second paragraph states that collected water will be sampled to verify compliance with the radiological screening criteria. Please include the screening criteria for water.	A requirement was added to Section 11.2 that collected water will be sampled to verify compliance with the Table 2, Column 2 effluent concentration values in Appendix B of 10 CFR 20 prior to discharge.
15.1	Appendix A - Contractor Quality Control Plan, Section 8.0- Definable Features of Work, Pages 17 and 18. The introduction paragraph states "Six definable features of work have been identified for this project, as outlined in the following subsections and further described in the Work Plan." These definable features of work (DFOW) were not discussed	The purpose of Definable Features of Work (DFOWs) are for field personnel and the Navy ROICC office to manage the quality of the specific tasks and are not intended to describe the general work. Specific task information can be found in the TSPs which will be provided to the BCT for reference.

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	in the Work Plan. This is information should be included and further described in the text of the Work Plan.	
15.2	Appendix A - Contractor Quality Control Plan, Section 8.0- Definable Features of Work, Pages 17 and 18 Figure 2 was referenced in the introductory paragraph and the following subsections but it was not included in the figures of Appendix A.	Figure 2 will be included.
16.1	Appendix B – Sampling and Analysis Plan, Worksheet #3 - Distribution List, Pages 12-15 of 88. Please update this list with the current BRAC Environmental Coordinator, and contacts for CDPH and AMEC.	These changes will be incorporated.
16.2	Appendix B – Sampling and Analysis Plan, Worksheet #11 - Project Quality Objectives, Step 5-Develop the Analytical Approach, Page 39 of 88. Please discuss when the soil, sediment or bulk samples will be collected in the Decision Rules process.	Decision rules and the associated discussion were modified to better address spectrum of measurements to be collected, including when soil, sediment, or bulk samples are collected.
16.3	Appendix B – Sampling and Analysis Plan, Worksheet #14 - Summary of Project Task, Page 43 of 88. The Data Collection should include smear samples from building/structure surfaces, and sediment samples from utility lines since these samples may be taken as part of the Work Plan implementation.	A discussion regarding the collection of supplemental samples was added to Worksheet #14.
16.4	Appendix B – Sampling and Analysis Plan, Worksheet #17 - Sampling Design and Rationale, Table 17.1 - Key Survey Design Elements, Page 48 of 88. The scan coverage for Class 2 survey unit has a wide range of 10% to 100%. Is this a MARSIMM recommendation? How will the exact scan coverage percentage be determined once a	Worksheet #11 reflects the Navy's typical default scan coverage of Class 1, Class 2, and Class 3 areas of approximately 100, 50, and 25 percent, respectively. However, scan coverage may vary on a case-by-case basis. Table 17.1 was corrected to be consistent with Worksheet #11.

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	Class 2 survey unit is delineated? Table 11.2 in Worksheet #11 shows 50% floor scan within a Class 2 area.	
16.5	<p>Appendix B – Sampling and Analysis Plan, Worksheet #17 - Sampling Design and Rationale, Fixed Point Measurement, Page 51 of 88.</p> <p>The reference to Appendix A of the Basewide Radiological Management Plan should be changed to Attachment 2-Fixed Point Measurement Locations. Appendix A includes the Contractor Quality Control Plan.</p>	The Worksheet #17 references were corrected.
16.6	<p>Appendix B – Sampling and Analysis Plan, Worksheet #17 - Sampling Design and Rationale, Investigation, Page 51 of 88.</p> <p>This paragraph states the investigations will be performed of locations with residual radioactivity above the investigation levels. Investigation levels were not discussed in the text of the Work Plan or elsewhere in the SAP. Please explain how the investigation levels are developed and how they relate to the screening criteria.</p>	See response to comment #11.
16.7	<p>Appendix B – Sampling and Analysis Plan, Worksheet #18 - Sampling Location and Methods / SOP Requirements Table, Page 53 of 88.</p> <p>Please include a figure in the SAP showing the areas listed in the table.</p>	Figure 10.1 was revised to show areas that will be worked on by ITSI Gilbane under its contract with the Navy. A reference to that figure was added to Worksheet #18.
16.8	<p>Appendix B – Sampling and Analysis Plan, Worksheet #19 - Analytical SOP Requirements Table, Page 54 of 88.</p> <p>Please explain why a smear or swipe sample was not included in this table.</p>	Worksheet #19 was corrected to include smear samples.
16.9	Appendix B – Sampling and Analysis Plan, Worksheet #20 -	Worksheet #20 was corrected to reflect the number of samples as

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	Analytical SOP Requirements Table, Page 55 of 88. Please discuss and identify the locations of the 50 soil/sediment and the 10 material/bulk sampling locations at TI.	‘TBD’ and explain that the number of sample locations, and thus the total number of samples to the laboratory, will be determined in the field.
16.10	Appendix B – Sampling and Analysis Plan, Worksheet #30 - Analytical Services Table, Page 70 of 88. Please explain why the analytical services for bulk material and smear samples were not included in this table.	Worksheet #30 was corrected to include analytical services for bulk material and smear samples.

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GENERAL COMMENTS		
1.	The Draft <i>"Treasure Island Radiological Scoping Surveys Basewide Radiological Management Work Plan"</i> has incorrectly referenced the recently withdrawn HRA STM which is inaccessible for the reader. Portions of the document are confusing with references to duplicated sections, and the referenced sampling analysis plan does not exist. There are inaccuracies in the number of measurements in Attachment 1. If this document is to be used as a standard for future similar proposals, the submission should be further along.	The draft RMP refers to the draft HRA STM which has not been withdrawn and is available to the reader. The SAP was submitted to the BCT on May 10, 2013. References within the document will be reviewed for accuracy. Refer to the response to comment 6 regarding Attachment 1.
2.	The Conceptual Model is inadequately developed; omitting sewer/sanitary lines, incinerator plume deposition and the effects from Operations Crossroads decontamination. Please expand the conceptual model to include the presence of high level radiation commodities at depth, transport of contaminated soil over common roads and paths, the extent of contamination and the bounding of Solid Waste Disposal Areas (SWDA's). This document has no approval signatures from the contractor, RASO and Navy BRAC. Please see attachment 1, "Radiation Protection Plan" May 21, 2009, as an example of a previously submitted signature page.	See response to DTSC Comment #1.2.
3.	The document uses as its basis the Historical Radiological Assessment (HRA) 2006 which has been previously characterized by EMB in a memorandum of April 13, 2011, "These findings point out the existing TI Historical Radiological Assessment (HRA) does not adequately address the nature and extent of radioactive materials on site." The document cites a Supplemental Technical Memorandum (HRA-STM) which has been recently withdrawn.	The Navy recognizes the position of CDPH on the HRA that was completed in 2006 and is currently working on the HRA STM in order to provide a more accurate CSM for NSTI. The draft HRA STM was not withdrawn and is available to the reader. While research and discussion on the HRA STM is ongoing, both the 2006 HRA and the Draft HRA STM document information that is

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		pertinent to the sites that will be evaluated with this RMP.
4.	It would be very helpful if it could be made clear in the Table of Contents that the second set of tables, Figures and Appendices, "A" through "G": belong to Appendix "C" and not to the document as a whole.	Incorrect references to supporting documents found in the text and table of contents have been corrected.
5.	This document attempts to survey, characterize and remediate basewide impacted areas in a single document. Each one of those activities should be a separate document.	See response to DTSC comment 1.3. This is also consistent with the approach previously approved by CDPH on other DoD installations.
6.	Attachment 1, "Number of Measurements", shows a misreading of MARSSIM process and its' underlying mathematical principles.	The presentation on the number of measurements presented in Attachment 1 has been reviewed to ensure it is consistence with MARSSIM. Changes to the text have been made to better clarify the application of the approach, which is consistent with other Navy projects. In addition, a provision has been added to Section 6.5 to verify survey design goals and constraints were met following data collection.
7.	CDPH-RHB surveys have identified numerous elevated readings and hotspots outside of the previously identified impacted areas, however, the TIRSSBRMWP has no provision for surveying areas not previously designated as impacted.	The scope of this project is to survey specific areas and is not intended to address all areas on the base. The Navy will evaluate other areas on a case by case basis in future projects.
8.	The document seems to represent a plan in constant flux, with no set date for a final product. There is no sampling and analysis plan, it leaves the door open to a host of unreviewed variances including: Task-Specific Plans, site specific Standard Operating Procedures and job specific Work Instructions.	The Navy refers the reviewer to the most recent document tracking sheet that is provided during the monthly BCT meeting for the planned date of the final product. The SAP was submitted to the BCT on May 10, 2013. At this time there are no site specific SOPs or job specific work instructions planned. Task Specific Plans, site specific SOPs and job specific work instructions will undergo

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		review by both BRAC and RASO and will be made available to the BCT members.
9.	According to Department of Navy (DON), it is conducting the environmental cleanup at Treasure Island in cooperation with US EPA. US EPA is a member of the Base Realignment and Closure Cleanup Team (BCT), and the BCT reviews documents and activities associated with the cleanup. According to US EPA, the federal government is not the lead regulatory agency; DTSC, a state agency, is the lead at NSTI."	As stated in the executive summary, environmental investigation and remediation activities are being conducted at the former NSTI under the DoD IR Program, with the Navy being the lead agency responsible for the environmental investigation and remediation activities. The DTSC is the lead state agency, supported by the CDPH and the RWQCB, San Francisco Bay Region.
SPECIFIC COMMENTS		
10.	Executive Summary, Page ES-I, Paragraph one, Sentence one states, "This Basewide Radiological Management Plan (RMP) describes the procedures and methodologies that will be implemented by the ITSI Gilbane Company (ITSI Gilbane) in the collection of data to support the radiological clearance of buildings, structures, and land areas at the former Naval Station Treasure Island (NSTI) in San Francisco, California, identified as radiologically impacted". Please identify the currently issued documents which describe the impacted areas.	The most recent document that describes sites as radiologically impacted is the Draft HRA STM. Research and discussion on the HRA STM is ongoing and the areas identified as radiologically impacted will be updated in the draft Final and Final HRA STM.
11.	Executive Summary, Page ES-I, Paragraph three, Sentence four, "The transport and fate of these contaminants are accounted for in three conceptual site models. These models address :(1) repair/solid waste disposal operations, (2) incidental releases related to training operations, and (3) spills/contamination from handling contaminated soils from Installation Restoration (IR) Site 12." Please see General Comment #3.	See response to DTSC Comment #1.2.

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12.	Executive Summary, Page ES-2, Paragraph one, Sentence one, "Specific data quality objectives (DQOs) will be developed for each survey using the EPA's Guidance on Systematic Planning Using the Data Quality Objectives Process (EPA, 2006a)." NSTI is a non- National Priority List (NPL) site and the EPA currently has not taken a position on radiological issues at NSTI. EMB expects DQOs to be drawn from MARSSIM.	The EPA reference has been replaced with reference to MARSSIM Appendix D.
13.	Section 1.1, Objective, Page one, Paragraph one, Bullet three, "Removing identified hotspots or radioactive commodities and conducting verification survey and sampling." Please include a forty-five (45) day time table for EMB review of any remediation plans for removal of radiological items or commodities.	If additional work plans are required the agencies will be given an additional review period to review those plans.
14.	Section 1.1, Objective, Page one, Paragraph one, Sentence two, "To the extent possible, activities will be conducted according to the guidelines in the Multi Agency Radiation Survey and Site Investigation Manual (MARSSIM; U.S. Department of Defense [(DOD], 2000) as incorporated into this RMP." Please explain what alternate methodologies might be used. Please explain how EMB will be notified of the change in methodologies.	See response to DTSC Comment #2.2.
15.	Section 1.2, Scope, Page one, Paragraph one, Sentence two states, "This RMP addresses a variety of radioactive material that may be found as buried World War II era luminescent dials and buttons." The great preponderance of higher level activity commodities are foils. Please include these higher level activity commodities in the list of radioactive materials. The May 17, 2012, the EMB memorandum to the Department of Navy (DON),	"Foils" have been added to the list of radioactive materials. UXO is not addressed as part of this survey because the UXO is not anticipated in the project areas. If suspect material is encountered during hotspot removal work will stop and the Navy will be consulted.

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	emphasized that any assessment of Treasure Island that does not fully explain the purpose of the higher level activity Ra-226 items found on Treasure Island is inadequate. Please include a discussion of how Unexploded Ordnance (UXO) will be addressed.	
16.	Section 1.2, Scope, Page two, Paragraph two, Sentence two, "These measures are addressed in a Radiation Protection Plan (RPP) (see Appendix C) and are performed under the ITSI Gilbane Radiation Safety Program." There are two separate Appendices labeled, "C", included in this document, neither one of them is a Radiation Protection Plan (RPP). There is no RPP included in this document. Please explain.	See response to DTSC Comment #3. The final document will be inclusive of all attachments including the RPP and Health and Safety documents. The appendices list has been updated to correctly reflect each appendix in sequence.
17.	Section 2.1, Radiological History, Page three, Paragraph one, Sentence one, "A comprehensive history of the radiological operations conducted by the Navy and Navy contractors at the former NSTI is documented in the <i>Final Treasure Island Naval Station Historical Radiological Assessment, Former Naval Station Treasure Island, California</i> (HRA; Weston Solutions, Incorporated [Weston], 2006)." EMB does not concur with this statement. The EMB Memorandum of May 17, 2012 notes, "That amount of radium found to date cannot be explained by gauges, deck markers and decontamination activities. The "Treasure Island, Site 12 Commodities Discovered During Excavation ... 7/5/10" table describes a much different source of contaminants. The list displays less than ten gauges or instruments and no deck markers while most of the contaminants are shown as foil, buttons and metal objects or fragments."	This statement has been deleted.

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18.	<p>Section 2.1, Radiological History, Page three, Paragraph one, Sentence two,</p> <p>"The Draft Historical Radiological Assessment - Supplemental Technical Memorandum, Naval Station Treasure Island, San Francisco, California (HRA-STM; Tri-Eco and Tetra Tech EMI Joint Venture [TriEco-Tt], 2012) documents the findings of additional investigation relative to the radiological operations and disposal at the former NSTI."; and "Figure 2.1, sourced from the HRA-STM (TriEco-Tt, 2012), shows the former NSTI divided into eight areas ... " The HRA-STM is a draft document currently withdrawn, please remove this reference.</p>	See response to DTSC Comment #3
19.	<p>Section 2.2, Radiologically Impacted Areas, Page three, Paragraph one, Sentence one,</p> <p>"Thirteen locations at the former NSTI were identified as radiologically impacted (orange and white cross-hatched areas in Figure 2.1)." Figure 2.1, "Radiologically Impacted Areas at the Former NSTI," page five, has been updated and no longer fits this description. Please revise this sentence.</p>	This sentence has been deleted.
20.	<p>Section 2.4, Conceptual Site Models, Page six, Paragraph one, Sentence one,</p> <p>"The transport and fate of radiological contaminants in impacted areas are accounted for in three conceptual site models (CSMs). These models address: (1) repair/solid waste disposal operations, (2) incidental releases related to training, operations, and (3) spills/contamination from handling contaminated soils from Installation Restoration (IR) Site 12." Please see General Comment #3.</p>	See response to DTSC Comment #1.2.
21.	<p>Table 2.1, "Areas Impacted by Repair/Solid Waste Disposal Operations," Page seven,</p>	This table has been deleted. See response to DTSC Comment #1.2.

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	IR Site 12; please include Building 461 as impacted.	
22.	<p>Table 2.3, "Areas Impacted by Handling Contaminated Soils from IR Site 12 SWDAs" Page ten, Does not include roadways, pathways, shoulders and ditches on the transport route of contaminated soils from IR Site 12 to 570. The Radiological Health Branch (RHB) of the California Department of Public Health (CDPH) survey, "Treasure Island, Site 12 Gamma Survey Report, Survey Dates: April 5-7, 2011", revealed elevated gross gamma levels on streets of Site 12 not previously identified, as well as four localized hotspots outside of the Radioactive/Contaminated Area (RCA) and one under the RCA fence line. Please include roadways, pathways, shoulders and ditches on the transport route of contaminated soils from IR Site 12 to 570. Please note the transport route included roads outside of IR site 12, will these roads be included in the surveys?</p>	This table has been deleted. See response to DTSC Comment #1.2.
23.	<p>Section 3.6, Application of Radiological Screening Criteria, Page15, Paragraph one, Sentence four, "The task-specific plan (TSP) can specify whether the data collected are anticipated to be enough for unrestricted release, assuming that no radiological contamination is found." Please include previously agreed to statistical analysis.</p>	Previously agreed to statistical analyses (box plot, histogram, distribution analysis, normal probability plot, and comparison to background) have been added to the text.
24.	<p>Section 4.1.9 Project Health and Safety Officer, Page 18, Paragraph one, Sentence two, "The Project H&S Officer will be responsible for the field implementation of the Health and Safety Plan (HASP), which includes the Accident Prevention Plan and Site Safety and Health Plan. Please include a signed Health and Safety Plan.</p>	See response to DTSC Comment #9.

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25.	Section 4.3.2 Radiation Protection, Page 20, Paragraph one, Sentence one, "Radiation protection measures will be implemented and maintained in accordance with the RPP found in Appendix C of this RMP." While there are two separate and distinct appendices "C"s in this document, neither one of them is a Radiation Protection Plan. Please explain.	See response to DTSC Comment #3.
26.	Section 4.3.3 Health and Safety, Page 20, Paragraph one, Sentence one, "Health and safety measures will be implemented and maintained in accordance with the HASP found in volume II of this document..." There is no volume II of this document. Please explain.	See response to DTSC Comment #9.
27.	Section 4.3.4, Quality Assurance/Quality Control, Page 21, Paragraph one, Sentence one, "QA/QC activities will be implemented and maintained in accordance with the Contractor Quality Control Plan (Appendix A) and SAP (Appendix B), which includes a Field Sampling Plan, and Quality Assurance Project Plan." The SAP was submitted separately and EMB will review it separately.	Comment noted.
28.	Section 4.4, Procedures, Page 21, Paragraph one, Sentence two, "As needed, site specific SOPs and work instructions will be developed for performing radiological work at the former NSTI. SOPs will be used to provide controls necessary for radiologically safe operations and essential to survey data quality. In limited situations involving ancillary radiological activities or to further augment TSPs or SOPs, radiological work instructions may be prepared to facilitate a specific activity. These radiological work	ITSI-Gilbane Corporate SOP's have been provided to CDPH-RHB for licensing purposes. Copies of SOP's and other documents generated can be made available for EMB as well.

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	instructions, when used, will be provided to the Navy for review and approval. Copies of the SOPs and work instructions will be maintained on-site during radiological work activities and will be available for review by the Navy and/or regulatory agencies upon request." Please forward a copy of these items to EMB.	
29.	Section 4.5.2, Field Documentation Forms, Page 22. EMB requests that completed forms will be legible, detailed, factual, and signed and dated by the individual completing the form.	The requested wording has been added to the text.
30.	Section 5.0, Data Quality Objectives Page 24, Paragraph one, Sentence one, "Specific DQOs will be developed for each survey using the EPA's <i>Guidance on Systematic Planning Using the Data Quality Objectives Process</i> (EPA, 2006a) and documented in the related TSPs." Please see Specific Comment #15.	See response to CDPH Comment #15.
31.	Section 6.2.2, Class 2 Area, Page 30, Paragraph one, Sentence two, "Examples of Class 2 areas include: (1) locations where radioactive materials were present in unsealed form, (2) potentially contaminated transport routes ... " The CHP-RHB survey, "Treasure Island, Site 12 Gamma Survey Report, Survey Dates: April 5-7, 2011", revealed elevated gross gamma levels on streets of Site 12 not previously identified. EMB believes the transport routes should be classified as Class 1 based on the results of the RHB survey.	Scan coverage of Site 12 areas, including transportation routes, will be 100%. Fixed point measurement (i.e., sample) collection density for roads will be performed consistent with a Class 2 area.
32.	Section 6.3.3 Background reference Area, Page 32, Paragraph one, Sentence two, "If no such areas are found to be suitable (with stakeholder concurrence), potential background reference areas having	The term 'stakeholder' has been replaced with 'BCT.'

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	physical and radiological characteristics similar to those of the impacted area(s) being evaluated will be identified." Please identify who is the stakeholder.	
33.	Section 6.7.5 Resurvey, Page 37, Paragraph three, Sentence one, "Where a small fraction of the area of a Class 1 survey unit is remediated, a resurvey of only the remediated area will be performed." Please define the term, "small fraction".	Text has been revised to define the term 'small fraction' as less than 10 percent.
34.	Section 7.1.2 Significant Events, Page 39, Paragraph one, Sentence two, "RASO will also be immediately notified of any significant events involving radiation or radioactive material. RASO will also be notified upon discovery of any anomalies involving radiation or radioactive material." Please notify RHB and EMB about any events that may have any bearing on licensee conditions.	The statement has been added to text as recommended.
35.	Section 8.0 Data Collection, Page 42, Paragraph one, Sentence three, "Surveys will be performed by trained individuals using calibrated instruments following Navy approved written procedures and/or protocols. Data will be recorded and reviewed, and documentation will be auditable." EMB will require that all instrumentation calibration records, QA/QC records be submitted for review as part of a Final Status Survey (FSS) or Removal Action Completion Report (RACR).	The requirement has been added to Section 12.3.
36.	Section 8.1.3, Response Checks, Page 44, Paragraph three, Sentence four, "If the instrument falls outside the acceptance criteria, the response check may be repeated ... " What is the limit on how	An instrument can fall outside the acceptance criteria twice in a row. Sentence has been modified to state that if the instrument falls outside the acceptance criteria, the response check may be repeated

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	many times an instrument can fall outside the acceptance criteria before it is removed from service?	one more time before the instrument is removed from service.
37.	Section 8.1.3, Response Checks, Page 44, Paragraph four, Sentence one, "Records of response checks will be maintained, along with any control charts or logs associated with each instrument." EMB will require that all instrumentation calibration records, QA/QC records be submitted for review as part of a Final Status Survey (FSS) or Removal Action Completion Report (RACR).	See response to CDPH Comment #35.
38.	Table 8.2, "Typical Detection Sensitivities", "Ludlum 4410: scan MDC 2.8 pCi/g." The typical reference area background for NSTI is 0.69 pCi/g. The proposed screening criteria are 1.0 pCi/g: this instrument apparently does not have the required sensitivity to detect the combined reference area background and proposed screening criteria. Please explain.	The Ludlum Model 44-20 was added as an additional instrument that may be used to perform gamma scan measurements. Given the screening criteria and the scan methodology, the scan MDC of the Ludlum Model 44-20 is calculated as 1.4 pCi/g, which is sufficiently low to detect Ra-226 concentrations of interest.
39.	Section 8.3.1 Gross Gamma Surface Scan Measurements, Page 46, Paragraph two, Sentence two, "Manual surface scan measurements will be performed using a Ludlum Model 44-10 2-inch (5.1 cm) by 2-inch NaI(Tl) gamma scintillation detector (or equivalent) with a Ludlum 2221 rate meter/scaler (or equivalent)", this instrument apparently does not have the required sensitivity to detect the combined reference area background and proposed screening criteria. Please explain.	See response to CDPH Comment #38.
40.	Section 8.3.2 Beta Surface Scan Measurements, Page 47, Paragraph one, Sentence two, "The scan rate may be adjusted depending on the expected detector response." Scan rates should be fixed, not variable. Please see NUREG 6364 on how surveyor expectations distort	Agreed; however, field conditions may require modifications to the technique need to be made. For example, for rougher surfaces, the source-to-detector geometry may require a slower scan rate to maintain an appropriate level of detector sensitivity.

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	and invalidate data collection which is likely with this direction.	

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GENERAL COMMENTS		
1.	The Draft "Treasure Island Radiological Scoping Surveys Sampling and Analysis Plan" uses as part of its basis the Historical Radiobiological Assessment Supplemental Technical Memorandum (HRASTM). In light of the fact that the HRASTM document has not been finalized, EMB may amend its comments in the future pending final approval of the HRA-STM.	Information summarizing the HRA and draft HRASTM has been removed from the document with the exception of details pertinent to the present ITSI Gilbane work scope.
2.	EMB currently utilizes Title 17 of the California Code of Regulations, Section 30256, and bases its recommendations regarding radiological releases in part on a comparison of the distribution of measurements at a surveyed and sampled site to the distribution of measurements in relevant background areas. EMB will expect to see comparisons of these background distributions to final status survey measurements in reports aimed at supporting unrestricted release of site with soils sampling and surveys.	Comparison to background has been added to Worksheet #14 as part of data assessment activities.
SPECIFIC COMMENTS		
3.	Executive Summary, Page two, Paragraph two, Sentence one. "Thirteen locations at the former NSTI were identified as radiologically impacted based on two historical radiological assessments conducted by the Navy in 2006 and 2012." It is EMB's concern since the Final HRASTM is not approved, that there is a possibility more impacted locations will be identified and additional conceptual site models maybe required. This Sampling and Analysis Plan (SAP) may not identify all impacted areas which may require investigation.	The sentence has been deleted.
4.	Executive Summary, Page two, Paragraph two, Sentence one. "These models address: (1) repair/solid waste disposal operations, (2) incidental releases related to training operations, and (3) spills/contamination from handling contaminated soils from Installation Restoration (IR) Site 12." The Conceptual Model is inadequately developed; omitting sewer/sanitary lines, incinerator plume deposition and the effects from Operations Crossroads decontamination. Please	Information and discussion regarding conceptual site models have been removed from the document with the exception of details pertinent to the present ITSI Gilbane work scope.

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	expand the conceptual model to include the presence of high level radiation commodities at depth, transport of contaminated soil over common roads and paths, the extent of contamination and the boundaries of the Solid Waste Disposal Areas (SWDA's).	
5.	SAP Worksheet #9 Project Scoping Sessions Participants Sheet, Page 26. Call Summary, A. Introduction of the Team and Points of Contact. (f.) "Radiological control technician (RCT) support- ITSI Gilbane does not have full time RCTs on staff and will use staff from body shops or subcontractors." Please explain the term, "body shop".	The term 'body shop' has been replaced with 'staff augmentation company.'
6.	SAP Worksheet #9 Project Scoping Sessions Participants Sheet, Page 26. Call Summary, B. Schedule, (d.) "It was agreed by all parties that ancillary documents such as the Radiation Protection Plan, Accident Prevention Plan (APP), Environmental Protection Plan (EPP), and Contractor Quality Control (CQC) Plan will be provided for NAVY/RASO review with the site 12 WP/SAP by November 19th," Please provide EMB with a copy of the Radiation Protection Plan and the Contractor Quality Control (CQC) Plan.	A complete set of documents will be provided upon finalization of the Radiological Management Plan.
7.	SAP Worksheet #9 Project Scoping Sessions Participants Sheet, Page 28. Call Summary, C. Technical Discussion (c.) sentence three, "ITSI Gilbane will be submitting a Radiological Survey and Instrumentation Summary for review and approval of approach and instrumentation. It will include information on establishment of minimum detectable concentration (MDCs), investigation levels, and release criteria." Please provide EMB with a copy of the Radiological Survey and Instrumentation Summary.	The radiological survey and instrumentation summary is found in Tables 8.1 and 8.2 of the Radiological Management Plan.
8.	SAP Worksheet #9 Project Scoping Sessions Participants Sheet, Page 28. Call Summary, D .Clarification, " ... the scope covers lines to the	No.

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	nearest pump station only since it is a gravity-fed line and after the pump station the line is pressurized." Previously distributed figures show, "Newly Identified Radiologically Impacted Storm or Sewer Line", which run from Building #3 to the Former Salvage Yard and Current Sewage Treatment Plant. Have these Newly Identified Radiologically Impacted Storm or Sewage lines been re-characterized? And if so, please provide documentation.	
9.	SAP Worksheet #10- Problem Definition, Page 30; Paragraph one, Sentence two. "This task order (0006) covers a portion of those areas identified in the HRAs." Does the term "HRAs" refer to both the HRA 2006 and the HRA-STM 2013? Please clarify. Will these objectives be applied only to the 13 previously enumerated locations? Is the DON planning on investigating other potential contaminated buildings, structures and land areas or sites?	See response to Comment #1.
10.	SAP Worksheet #10- Problem Definition, Page 30; Paragraph two, Sentence one. "A comprehensive history of the radiological operations conducted by the Navy and Navy contractors at the former NSTI is documented in the Final Treasure Island Naval Station Historical Radiological Assessment, Former Naval Station Treasure Island, California (Weston Solutions, Incorporated [Weston], 2006) (HRA). The Draft Historical Radiological Assessment- Supplemental Technical Memorandum, Naval Station Treasure Island, San Francisco, California (TriEco-Tt, 2012) (HRA-STM) documents the findings of additional investigation relative to the radiological operations and disposal at the former NSTI." Please see General Comment #1.	See response to Comment #1.
11.	SAP Worksheet #10- Problem Definition, Page 30, Paragraph four Sentence three. "The transport and fate of these contaminants are accounted for in three conceptual site models. These models address: (1) repair/solid waste	See response to Comment #4.

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	disposal operations, (2) incidental releases related to training operations and (3) spills/contamination from handling contaminated soils from Installation Restoration Site 12." Please see Specific Comment#4.	
12.	SAP Worksheet #10- Problem Definition (Continued), Figure 10.1. "Radiologically Impacted Areas at the Former NSTI". This figure shows no impacted areas in Area of Interest (AOI) #7 and omits Building 461 as impacted. Previously distributed figures show, "Newly Identified Radiologically Impacted Storm or Sewer Line" that connects Building #3 to the Former Salvage Yard and Current Sewage Treatment Plant; these lines do not appear in this figure. Please amend the figure to include the impacted areas in AOI #7, Building 461 and the various "Newly Identified Radiologically Impacted Storm or Sewer Line".	Figure 10.1 has been revised to show areas that will be worked on by ITSI Gilbane under its contract with the Navy.
13.	SAP Worksheet #10- Problem Definition (Continued) Table 10.1. Areas Impacted by Repair/Solid Waste Disposal Operations, page 32, please reconcile with Figure 10.1., which shows no impacted areas in AOI #7.	The table has been deleted. See response to Comments #1 and #12.
14.	SAP Worksheet #10- Problem Definition (Continued), page 33, paragraph two, sentence one. Please change reference from (Table 1 0.2) to (Table 10.1).	The sentence has been deleted. See response to Comment #1.
15.	SAP Worksheet #10- Problem Definition (Continued), Table 10.3. "Areas Impacted by Handling Contaminated Soils from IR Site 12 SWDAs". Please include roadways, pathways, shoulders and ditches on the transport route of contaminated soils from IR Site 12 to Building 570.	The table has been deleted. See response to Comments #1 and #12.
16.	SAP Worksheet #11 -Project Quality Objectives/Systematic Planning Process Statements, Page 36, 11.1 Step 1 - State the Problem, Problem Description, Paragraph one, Sentence three. "If no remediation is required, then a suitable technical basis is required to radiologically clear the building, structure, or land area for unrestricted use." Please describe the technical basis.	A description of a suitable technical basis has been added.

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17.	SAP Worksheet #11 -Project Quality Objectives (continued), Page 38, 11.4 Step 4-Define the Study Boundaries Table 11.1 - Radiological Screening Criteria. Please include Cs-137 and Th-232 Soil (or Volumetric) Radioactivity.	Radiological screening criteria have not been developed for Cs-137 and Th-232; however, data will be collected and statistically evaluated.
18.	SAP Worksheet #11 - Project Quality Objectives (continued), Page 39, 11.5 Step 5-Develop the Analytic Approach, Table 11.2 - Decision Rules. For Class 1 area, then, "Scan 100% floor, 50% lower walls (up to 2 m)".MARSSIM recommends 100% coverage for Class 1 Structure Surface Scans. (Table 5.9 "Recommended Survey Coverage of Structures and Land Areas." MARSSIM, NRC et al) Please explain how the purposed survey parameters would support unrestricted release of Class 1 Structures.	MARSSIM places greater survey efforts on areas that have, or had, the highest potential for contamination. Consistent with this graded approach, the Navy focuses resources on areas that are most likely to have contaminated surfaces. In the case of a structure, floor surfaces are more likely than wall surfaces to be contaminated.
19.	SAP Worksheet #14- Summary of Project Tasks, Page 43, (2) Data Assessment: Bullet #4. "Interpret data and make conclusion: data do or do not provide statistically significant evidence that the level of residual radioactivity is less than radiological screening criteria." EMB currently uses a number of statistical analytical measures to compare Survey Units to Reference Background Areas, these include: box plots, histograms, distribution function analysis, cumulative probability distributions, normal probability plots and descriptive statistics for Gamma Walkover Surveys, Static Surveys and Soil Concentration data Analysis. Please provide the relevant statistical analytical measures in your Data Assessment; as was agreed to in, " Response to Comments Analysis of Gamma Survey and Ra-226 Soil Concentration Data at the Treasure Island Site-Background Areas and the Area 7 Background Reference Area", April 23,2012.	The agreed-to statistical analytical measures have been added to Worksheet #14.
20.	SAP Worksheet #17- Sampling Design and Rationale, Page 48, Table 17.1 – Key Survey Design Elements, Minimum Number - Static Measurements.	The number of measurements has been corrected from 15 to 20 in order to be consistent with the Radiological Management Plan. The sufficiency of 20 measurements is addressed in Attachment 1 of the Radiological

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	Please explain how the number of measurements was arrived at.	Management Plan.
21.	SAP Worksheet #17 - Sampling Design and Rationale, (continued), Page 50, Background Reference Area, Paragraph one, Sentence two. "If none are found to be suitable (with stakeholder concurrence) ... " Please identify "Stakeholder(s)".	The term 'stakeholder' was replaced with 'BCT'.
22.	SAP Worksheet #17- Sampling Design and Rationale, (continued), Page 51, Fixed Point Measurements, Paragraph two, Sentence one. "A minimum of 18 fixed point measurements will be collected per survey unit. This number of measurements was developed using the MARSSIM process and is based on the project design goals and constraints (see Basewide Radiological Management Plan, Appendix A)." This appears to contradict, Table 17.1- Key Survey Design Elements, Minimum Number Static Measurements, which places the minimum number of measurements at 15. Please resolve.	The referenced sections have been corrected to state the number of measurements as 20, which is the number called for in the Radiological Management Plan.
23.	APPENDIX A, Field Sampling Standard Operating Procedures, Page four, 4.2 OTHER ITSI FORMS, Bullet #6, "Field Change Request Form (attached; Section 6.0). This form is used to request changes while in the field to procedures specified in the approved site-specific plans (i.e., changes in sampling methodology, etc.)." Please explain how and in what time frame EMB will be provided with a copy of these changes.	Approved field change requests that have been implemented by the Navy will be provided to CDPH for their reference.
24.	APPENDIX A, Field Sampling Standard Operating Procedures; Standard Operating Procedure (SOP), Surface Water: Grab Sampling, PR-TC-02.02.04.01. Please explain why this SOP was included in this document.	The SOP was included in error and will be removed.
25.	APPENDIX A, Field Sampling Standard Operating Procedures; Standard Operating Procedure (SOP), ITSI-RSOP-03.01 Radiation Safety Instrumentation. Please provide this SOP.	ITSI Gilbane Corporate SOP's have been provided to CDPH RHB for licensing purposes. Copies of any SOPs can also be provided to EMB.

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SPECIFIC COMMENTS		
1.	<p>Executive Summary</p> <p>The Executive Summary does not include either a Sampling and Analysis Plan, or Data Quality Objectives, or a survey design or survey plan, stating only that those items will be supplied under separate cover. Lacking these elements, I am hard pressed to discern the purpose of the present document, unless it is to gather the supporting documents and present them with the hope of finding out if the preliminary work that the consultant has completed to date conforms to reviewers' expectations. In that regard, it does seem from my reading of the current document that the consultant can be expected to produce a site contamination survey that will accurately describe the current state of remaining radioactive contamination at Treasure Island.</p>	<p>The RMP describes the procedures and methodologies to be used in the collection of data to support the radiological clearance of buildings, structures, and land areas. The final document will contain a full set of appendices and be available to the BCT for reference. TSPs will be prepared for individual site- and/or task-specific activities warranting guidance beyond that provided in the RMP. The TSP will provide relevant location-specific data and identify variances and/or additions to the RMP.</p>
2.	<p>Table 3.2</p> <p>I would also like to suggest that the Navy's consultant also consider supplementing the radiological screening criteria that it has presented in Table 3.2 with calculations from EPA's PRG calculator (soil) and Building PRG calculator (building surfaces).</p>	<p>The screening criteria has been developed considering previously used screening criteria at NSTI. For evaluation of the data collected under this Work Plan, the screening criteria will be considered along with statistical analysis and dose modeling in order to make proper decisions for the future of the areas.</p>
3.	<p>In addition, the Navy's consultant should be aware that EPA's understanding of the equivalency of risk and radiation dose is not based directly on the 1988 findings that were published in the 4th National Academy of Sciences Report on the Biological Effects of Ionizing Radiation (typically known as BEIR IV), which provided several risk coefficients for ionizing radiation doses, that were based on both relative risk and absolute risk models. Although the report did not recommend any single risk coefficient for use in public policy decisions, after that report was published many health physicists routinely associated a risk rate</p>	<p>See response to Comment #2.</p>

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	<p>of 7% per 100 rem (0.07 per 100 rem) with both chronic and acute radiation doses. That practice is consistent with two OSWER directives that were published in 1997, EPA-R-97-013/OSWER 9335.0-69 Rules of Thumb for Superfund Remedy Selection and OSWER 9200.4-18 Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination.</p> <p>Using 7% per 100 rem in the 30 yr residential exposure scenario, health physicists generally inferred that a risk rate of 1E-4 was associated with an annual dose rate of 5 mrem/yr as follows:</p> $\frac{1 \times 10^{-4}}{0.07/100 \text{ rem} \times 1 \text{ rem}/1000 \text{ mrem} \times 30 \text{ yr}} = 4.76 \text{ mrem/yr or approximately } 5 \text{ mrem/yr}$ <p>and $5 \text{ mrem/yr} \times 30 \text{ yr} \times 1 \text{ rem}/1000 \text{ mrem} \times 0.07/100 \text{ rem} = 1.05\text{E}-4$ or approximately 10^{-4}</p> <p>However, even though EPA has accepted an equivalency of 5 mrem/yr with a risk of 1×10^{-4} in the residential scenario many times in the past, the Agency does not use a risk coefficient of 7% per 100 rem in calculating the risk from radiation doses, or from exposure to radioactive contaminants. Instead, the slope factors in the Health Effects Assessment Summary Tables (HEAST) are based on information that's published in Federal Guidance Report No. 11, Limiting Values of Radionuclide Intake and Air Concentration, and Dose Conversion Factors for Inhalation, Submersion, and Ingestion (EPA 520/1-88-020, September 1988); Federal Guidance Report No. 12, External Exposure to Radionuclides in</p>	

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	<p>Air, Water and Soil (EPA 402-R-93-081, September 1993); and Federal Guidance Report No. 13, Cancer Risk Coefficients for Environmental Exposure to Radionuclides (EPA 402-R-99-01, September 1999).</p> <p>Federal Guidance Report No. 13 (1999), in particular, combines an age- and gender- adjusted risk coefficient of 8.46% per 100 rem (0.0846 per 100 rem) with radiation dose estimates for inhalation and ingestion that are calculated using the dosimetry models in ICRP Publication 30, Limits for Intakes of Radionuclides by Workers (International Commission on Radiation Protection, 1972). The slope factors are further adjusted by information that's taken from a variety of reports; that additional detail can be found in the discussion in Federal Guidance Report No. 13, at http://www.epa.gov/radiation/docs/federal/402-r-99-001.pdf.</p> <p>The risk/dose coefficient of 8.46%/Sv, or .0846/100 rem, that is currently in use by EPA, can be found on p. 182 of FGR 13. Since a risk coefficient of 8.46% per 100 rem was used to produce the slope factors in the current HEAST tables, I recommend using the same risk coefficient when associating risk with any calculated radiation dose in the CERCLA context, as follows:</p> $\frac{1 \times 10^{-4}}{0.0846/100 \text{ rem} \times 1 \text{ rem}/1000 \text{ mrem} \times 30 \text{ yr}}$ <p>= 3.94 mrem/yr or approximately 4 mrem/yr</p>	

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	<p>and $4 \text{ mrem/yr} \times 30 \text{ yr} \times 1 \text{ rem}/1000 \text{ mrem} \times 0.0846/100 \text{ rem} = 1.02\text{E-}4$ or approximately 10^{-4}</p> <p>EPA's PRG calculator continues to evolve, and in some cases uses a combination of slope factors that are derived using either ICRP Publication 30 or the more recent ICRP Publications 60 (1991), 68 (1994), 69 (1995), 71 (1995) and 72 (1995). Some of those publications have now also been superseded.</p> <p>In fact, FGR 13 will soon be superseded by EPA Radiogenic Cancer Risk Models and Projections for the U.S. Population (EPA 402-R-11-001, April 2011), generally referred to as the Blue Book, which can be found at http://epa.gov/radiation/assessment/blue-book/index.html <http://epa.gov/radiation/assessment/blue-book/index.html> The Navy's contractor should pay particular attention to Section 7 on p. 127. Final adoption of the findings in the Blue Book will most likely result in a new FGR and the new dosimetry and risk coefficients will be incorporated into the PRG calculator. Using an anticipated new risk coefficient that's about 35% higher than .0846/100 rem, one can expect that the new target annual dose limit will be closer to 3 mrem/yr than 4 mrem/yr.</p> <p>Based on my reading of previous building contamination surveys that the Navy's contractor submitted for Hunter's Point Naval Shipyard, I have every reason to expect that, even using the updated risk coefficients, the values that are provided in Reg Guide 1.86 will continue to result in projected radiation doses that fall within EPA's risk management range of 1×10^{-4} to 1×10^{-6},</p>	

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	provided that the NRC release criteria are correctly applied.	

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GENERAL COMMENTS		
1.	<p>The document contains 37 worksheets that summarize and tabulate various site-specific facts and organization-related requirements for the planned scoping surveys at Treasure Island. Still missing are essential items that I identified in EPA's May 16th review of the <i>Basewide Radiological Management Work Plan</i>:</p> <ul style="list-style-type: none"> • Data Quality Objectives (DQOs) • MARSSIM-based survey designs, including: Designation of Class 1, Class 2 and Class 3 survey areas Calculated sample spacings Sample collection location diagrams • Laboratory procedures, and an evaluation of the various laboratories' measurement sensitivity, precision and specificity • Laboratory sample collection, packaging and shipment requirements 	<p>Specific DQOs, including decision statements, will be developed for each survey and documented in the related TSP(s). The DQOs will define the survey design and data to be collected to support the radiological clearance of buildings, structures, and land areas. Where possible, the survey design will be such that if elevated residual radioactivity is not identified, the collected data set may be used as the final status survey to clear the area radiologically for unrestricted use.</p>
2.	<p>The SAP restates information that was included in the previous report, listing 13 potentially radiologically impacted locations in eight Areas of Interest (AOIs) that the Navy identified in a Historical Radiological Assessment (HRA) that was prepared by Weston Solutions and submitted in February 2006, and in a Supplemental Technical Memorandum that was prepared by Tri-Eco and Tetra Tech EMI, and submitted in August 2012. The SAP also lists the potential radionuclides of concern (ROCs), Cs-137, Ra-226 and Th-232 that were previously listed in the Work Plan. The 13 potentially impacted locations are enumerated with</p>	<p>Based on the issues identified with the HRA and draft HRASTM, information summarizing the HRA and draft HRASTM has been removed from the document with the exception of details pertinent to the present ITSI Gilbane work scope.</p>

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	<p>their associated ROCs in Worksheet #10, Tables 10.1, 10.2 and 10.3. Those 13 locations were, or might have been, affected by (1) ship repair or solid waste disposal operations; by (2) releases that were incidental to training; or by (3) spills or other contamination that resulted from handling contaminated soils associated with Installation Restoration (IR) Site 12. Releases that might have been incidental to training include those from the mockup USS Pandemonium that has been described several times over the past few months in the local news. Those 3 contamination scenarios constitute the conceptual site models (CSMs) that will serve as the basis for the survey criteria that the contractor should have provided in the SAP, but did not.</p>	
3.	<p>The SAP also restates the radiological screening criteria in Worksheet #11, Table 11.1, which are based on the U.S. Nuclear Regulatory Commission's Regulatory Guide 1.86, <i>Termination of Operating Licenses for Nuclear Reactors</i>, dated June 1974 and reviewed December 2011. Worksheet #11 also provides a procedure for establishing DQOs, but it does not provide any linkage between the DQOs and the radiological screening criteria. Although the previous document (the Work Plan) supplemented the rationale for use of the contamination limits in Reg Guide 1.86 by equating a 10⁻⁴ risk level to an annual radiation dose rate of 5 mrem/year (residential scenario), Worksheet #11 makes no mention of either a risk or dose rate target. EPA's May 16th review addressed the relationship between risk and dose rate that EPA believes the Navy's contractor should use.</p>	<p>A note was added to Table 11.1 supplementing the rationale for use of the contamination limits in Reg Guide 1.86 by equating a 10⁻⁴ risk level to an annual radiation dose rate of 5 mrem/year (residential scenario). Regarding the linkage between the DQOs and the radiological screening criteria, the Navy's intent is to perform the work in a manner consistent with the direction provided by State of California agencies who are the lead state regulators for this work.</p>

**Responses to BRAC Cleanup Team (BCT) Comments on the
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REVIEW COMMENTS – NGTS, TIDA (on the Work Plan) dated May 13, 2013		
No.	Comments	Responses
SPECIFIC COMMENTS		
1.	Section 1.2, Page 2 References a Radiation Protection Plan as Appendix C. Appendix C is actually the Stormwater Pollution Prevention Plan. The draft does not include a Radiation Protection Plan.	See response to DTSC Comment #3.
2.	Section 2.2, Page 3 and Figure 2.1 While it is not necessary to go into great detail rehashing the information in the HRA and the draft STM, the Basewide Radiological Management Plan should still be clear about the status of Site 12 and the SWDAs.	See response to DTSC Comment #1.2.
3.	Tables 2.1, 2.2 and 2.3 Tables do not specifically address storm drains and associated outfalls that originate from radiologically impacted areas (e.g. Building 233 site).	The tables have been deleted. See response to DTSC Comment #1.2.
4.	Section 2.3 We recommend elaborating on the different nature of the “potential” ROCs. Ra-226 contamination is known to exist in certain areas, however, to our knowledge Cs-137 contamination has not been identified at TI and was included as a ROC in deference to the presence of sealed sources, known of which are known to have leaked.	As recommended, a discussion has been added to address the different nature of ROCs.
5.	Section 2.4.1, Page 6 The discussion in the first two paragraphs seems inconsistent with the current state of knowledge for Site 12 and with the discussion on Page 7. Unlike the other areas cited (e.g. Building 3), the existence of radiological contamination in Site 12 and the SWDAs is well known (and remedial actions have been performed).	See response to DTSC Comment #1.2.

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6.	Table 3.1 Are the screening criteria for surfaces to be interpreted literally (i.e. for any individual 100 cm ² area) or is there a maximum area over which the stated criteria will be applied (e.g. averaged over an area not larger than the one square meter)?	The intent is that the screening criteria for surfaces are interpreted literally. Any individual area, large or small, with surface radioactivity above the screening criteria will be investigated and additional data collected as described in the plan.
7.	Section 8.4.3 and Table 3.1 What screening criteria (or MDAs) will be applied for smear samples (removable contamination)?	A sentence was added to Section 3.5 stating that an arbitrary value of 20% of the Table 3.1 radiological screening criteria will be used to compare smear sample results. This practice is consistent with the approach used in NRC Regulatory Guide 1.86.
8.	Section 6.0 and Table 6.1 The table pertains to “textbook” final status surveys based on previous actions (i.e. site assessments, scoping surveys, characterization surveys, etc.). The text states that judgmental investigations will be performed, but these are not specifically addressed in the table of “key” design elements. We recommend some elaboration on the use of judgmental assessments be provided in both the text and the table to encompass situations where scoping or characterization surveys are used to support a final status determination.	Additional discussion regarding the use of supplemental or judgmental sampling has been added.
9.	Section 6.1, First Sentence. Consider revising it to read “Four types of surveys may be employed...” or otherwise clarifying that not all types will necessarily be needed for all areas. Likewise, consider some alternative language to the statements that surveys “will” be performed in Sections 6.1.2 through 6.1.4.	Sentences revised to read “may” vs. “will” and explanation added to Section 6.1 that one or more of the four types of surveys will be performed of each impacted area.
10.	Section 6.2 We recommend elaborating that, per MARSSIM, impacted areas are Class 1 by default and are assigned as Class 2 or 3 as	Section 6.2 has been clarified to explain the working hypothesis that all impacted areas have a potential for residual radioactivity above the radiological screening criteria. This means that areas are

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	warranted by the available survey data and other information.	initially considered Class 1 areas unless some basis for classification as Class 2 or Class 3 is identified.
11.	Section 6.6.1 15 meters between cuts may not be appropriate for shorter piping runs. Also, judgment should be applied where appropriate for selecting locations for cuts or other intrusive investigations, e.g. locations such as low points, cleanouts, bends, elbows, etc.	Clarification has been added to the text that access to internal pipe surfaces will be created approximately every 15 m or less to facilitate data collection where manholes, catch basins, or other suitable access points don't otherwise exist. Other considerations to facilitate intrusive investigations may also be used, such as system low points, clean-outs, pipe bends, etc.
12.	Section 6.7.1 Describe, qualitatively at least, the relationship between action levels and the screening criteria. Also, there's an extra "improperly" in the last sentence.	See response to DTSC Comment #11. The extra "improperly" has been deleted. The terms 'action level' and 'investigation level' have been replaced with 'radiological screening criteria' to avoid confusion.
13.	Section 8 and Elsewhere The methods and sensitivities described for gamma scan surveys for outdoor areas do not specifically address localized hot spots or commodities. Instrument performance (sensitivity) for discrete sources should be addressed in the Plan and in the Task Specific Plans / Work Plans, where applicable.	Scan MDCs for both distributed (volumetric) residual radioactivity and point source (e.g. hot spots, radioactive commodities) will be prepared and documented as part of instrument set-up.
14.	Section 8.1.1 Clarify the distinction between "surface scan" measurements (presumably for ground surfaces) and "scan measurements" (presumably for building / structure surfaces).	There is no intended distinction. The "surface scan" term has been changed to "scan" throughout the document.
15.	Section 8.1.5 Where will the established <i>a priori</i> MDCs be documented?	The instrument MDCs will be prepared and documented as part of the instrument set-up process and captured as a project record.
16.	Section 8.3.2 Suggest revising the text to address both alpha and beta surface scans in case alpha scans are needed to achieve sufficient MDCs	Text has been revised as recommended. The scan rate will be adjusted as necessary to achieve an appropriate alpha scan MDC.

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	relative to the screening criteria. A 15 cm/s scan rate is probably optimistic.	
17.	Section 8.3.3 Why is such a rapid scan rate (0.5 m/s) specified? Also, will instrumentation be available for scanning smaller diameter piping, if encountered?	The target scan rate has been reduced to 15 cm/s. TI Base maps show 5-, 6-, and 8-inch diameter piping. Smaller piping will require a different detector and a revision to the RMP.
18.	Section 8.4.1 “... approximately 1,000 grams of material will be collected per sample.” Consider asserting that target on a volumetric basis (e.g. ~1,000 mL) rather than a mass basis.	Wording has been revised as recommended.
19.	Table 8.3 What is the expected MDC for Ra-226 via gamma spectrometry if the MDC for Cs-137 is 0.1 pCi/g?	0.4 pCi/g based on inference from progeny Bi-214, assuming secular equilibrium is achieved.
20.	Section 8.4.3 Under what circumstances will smears be collected and how will the locations be selected? Will smears always be collected when surveying building/structure surfaces?	Smear samples are considered an alternative measurement method that may be applied as described in Section 6.6. They are collected when additional qualitative information regarding the nature of the radioactivity (i.e., fixed or removable) is desired.
21.	Section 11.1 and 11.2 The Plan states water misting or similar techniques will be used for dust control (Section 11.1), but also states “minimum use of water is anticipated” for this purpose (Section 11.2). How will the effectiveness of dust control/fugitive emission measures be verified? Will air monitoring be used? What methods and sensitivities will be employed? Where will these be documented?	Dust control measures to be implemented during handling and storage are discussed in Section 11.3, as well as in the project Environmental Protection Plan, which includes the Dust Control Plan.
22.	Section 11.2 It would seem imprudent to use potentially contaminated stormwater for dust control, filtered or otherwise. Is that what the text is implying? Have release criteria for radiologically	The statement was revised to remove the provision for collected stormwater to be used for dust control. See also response to DTSC Comment #14.

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	contaminated water been established?	
23.	Section 12/12.3 Applicable Task Specific Plans/Work Plans, DQOs, etc. generated for a given area should also be included with the survey report package.	The task-specific plans/work plans include the DQOs and other details generated for a given impacted area. That document is provided separately, rather than as part of the survey report package.
24.	Appendix B When will the Sampling and Analysis Plan be provided?	The sampling and analysis plan was provided on May 13, 2013 under separate cover letter.
25.	Appendix C, Draft CERCLA Stormwater Plan The figures referenced in the text were not included in the review draft.	These figures will be included.

**Responses to BRAC Cleanup Team (BCT) Comments on the
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REVIEW COMMENTS – NGTS, TIDA (on the SAP) dated June 3, 2013		
No.	Comments	Responses
1.	This document seems disjointed and in need of better focus with respect to its scope, which itself is unclear. A lot of the material is redundant with the main text of the draft Basewide Radiological Management Plan.	Where possible, the Radiological Management Plan will be modified to clarify intent and eliminate redundancy.
2.	SAP Worksheet 11. Describes a final status survey process conducted subsequent to scoping and characterization efforts. The scoping and characterization assessments that would be required to justify designating impacted areas as Class 2 or 3 (i.e. something other than Class 1) are not addressed. The MARSSIM final status survey process is predicated upon a sufficient degree of radiological characterization having been performed. It cannot be applied on a standalone basis ex ante.	The overall intent of Radiological Management Plan is to support site characterization and refinement of draft HRA-STM. However, where possible, the survey design will be such that if elevated residual radioactivity is not identified, the collected data set may be used as the final status survey to clear the area radiologically for unrestricted use.
3.	Table 11.1: Do the surface screening values reflect square meter averages or will they be applied at the 100 cm ² level?	They are intended to be applied on the 100 cm ² level.
4.	Worksheets 11 and 17. Smear surveys and dose rate measurements should also be used to augment the surface contamination assessments, for completeness and for ALARA considerations.	A discussion of supplemental measurements has been added to Worksheet #11 and Worksheet #17.
5.	Table 11.1. Does not address bulk materials such as those itemized under "Potential Affected Media" under Section 11.3.	Table 11.1 radiological screening criteria for surface and volumetric radioactivity apply to bulk materials provided they are part of buildings, structures, or land areas intended to be radiologically cleared for unrestricted use. Otherwise, material and equipment are released from radiological controls in accordance with the Radiation Protection Plan, as provided for in the Radiological

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REVIEW COMMENTS – NGTS, TIDA (on the SAP) dated June 3, 2013		
No.	Comments	Responses
		Management Plan.
6.	Worksheet 12. The justification given in Worksheet 12 for field QC samples not being required seems awkward. Please revise for clarity.	Worksheet #12 text has been revised to clarify why field QC samples are not applicable.
7.	Worksheet 11 and Worksheet 17. Worksheet 17 has the same issue as Worksheet 11: it doesn't seem to engender a comprehensive approach but rather fast forwards to FSS. As with Worksheet 11, the key survey design elements given in Table 17.1 do not encompass scoping and characterization, but rather tacitly assume these have been accomplished sufficiently. It is understood there is a desire to accomplish characterization and final status in a single action if possible, but to achieve that the characterization investigations must be thorough and go beyond the survey elements shown in Table 17.1 (which assume characterization has already been completed). As an example, the paragraph "Surface Scan Measurements" includes the statement "The level of scanning effort will be proportional to the potential for elevated residual activity." That potential cannot be reliably estimated without sufficient characterization.	See response to Comment #2.
8.	Worksheet 18. What are the bases for the estimated numbers of samples given in the table?	The assumptions provided in the original scope of work formed the initial basis for the number of samples. However, the number of samples have been revised 'TBD' based on the evolution of the survey planning.
9.	Worksheet 19. The sample volume entries are in units of mass (grams), not volume.	The table has been corrected to reflect volume instead of mass.

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REVIEW COMMENTS – AMEC, TIDA (on the Work Plan) dated May 13, 2013		
No.	Comments	Responses
SPECIFIC COMMENTS		
1.	Figure 2.1 A legend should be included on the figure. Additionally, there was much discussion on this figure when it was presented in the Draft HRA-STM. TIDA does not believe it is appropriate to include this figure in a final report until there is resolution regarding what areas to show as radiologically impacted.	Figure 2.1 has been revised to only show areas that will be worked by ITSI Gilbane under its contract. A legend has been added to the figure.
2.	Section 2.2 / Figure 2.1 It is unclear from the figure what the boundaries of the 13 radiologically impacted areas are.	See response to Comment #1.
3.	Section 2.4.3 The first sentence refers to "contaminated soils from IR Site 12 that were spread during transport through IR Site 12." Table 2.3 does not address this. If this is being addressed as part of other planned activities in IR Site 12 described in Section 2.4.1, please state this and refer reader to this section.	Information summarizing the HRA and draft HRA-STM, including tables and discussion regarding the conceptual site models, has been removed from the document with the exception of details pertinent to the present ITSI Gilbane work scope. Those details are found in a restructured Section 2.0.
4.	Table 3.1 It is not clear that the Soil radioactivity screening level for Ra-226 is 1.0 pCi/g above background. Please include the words "above background" in the column header or in the table itself	Table 3.1, note b, qualifies the screening criteria as an 'above background' value.
5.	Section 3.5.3 This section indicates that the Radiation Protection Plan (RPP) is included in Appendix C; however, Appendix C is the SWPPP. Please provide the RPP for review prior to finalizing the document.	The RPP will be provided with the final project plans for your reference.
6.	Section 4.3.1 The text indicates that the TSPs will be provided to the BRAC	TSPs will be provided to the BCT for reference.

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	PMO and RASO for review. These documents should also be provided to the agencies for review.	
7.	Section 7.1.1 Please include TIDA on notifications of the planned schedule for mobilization, work sequencing, and demobilization.	Notifications to TIDA have been added.
8.	Section 8.0 It is unclear why the items in this section are specifically called out as definable features of work (DFOWs) when this is supposed to be a general work plan with details provided in subsequent task-specific plans (TSPs). The DFOWs do not include all 13 areas identified in Section 2.4. Based on Section 2.4, there are several additional tasks that will be performed that are not identified as DFOWs, and therefore, it is misleading. I would suggest removing this section and including this information in the TSPs or revising this section to include all of the tasks that will be performed at the 13 areas identified.	See response to DTSC comment #15.1.
9.	Section 9.0 The text indicates that the three phases of QC will be applied to the DFOWs described in Section 8.0. These phases should be applied to all work conducted in accordance with this work plan.	See response to DTSC comment #15.1.
10.	Section 11.3 Stockpiles should be covered at all times, except during placement and removal of soil, to prevent migration of dust.	This requirement has been added.
11.	Appendix B - The Sampling and Analysis Plan was not included with this draft. We would like the opportunity to review that before the document is finalized.	The SAP was submitted to the BCT on May 10, 2013.
12.	Appendix C, Section 2.1.6 and subsequent sections The project description only includes a portion of the work that	See response to Comment #3.

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	will be conducted (Site 12 and Site 32, Building 3, and former Buildings 7 and 233). Subsequent sections are specific to only the work to be conducted at these sites. The SWPPP should either include a complete description of the work to be conducted in all 13 areas or be revised to that it is more general, with site-specific storm water pollution prevention measures included in the TSPs.	
13.	Appendix C, Section 2.4 The construction schedule is out of date. Changes should be made before the document is finalized.	The schedule will be updated before the document is finalized.
14.	Appendix C, Table 7.6 If specific information is retained (see Comment 10), then metals should be included as pollutant and water quality indicator constituent associated with contaminated soil.	Metals analysis has been added to the SWPPP.

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REVIEW COMMENTS – AMEC and Treadwell & Rollo, TIDA (on the SAP) dated June 6, 2013					
No.	Comments				Responses
GENERAL COMMENTS					
1.	The decision statement(s) are not clearly defined and it is unclear how data will be used to obtain radiological clearance to unrestricted use, when additional sampling will be conducted, or what consultation with the Navy is required to make these determinations.				Specific DQOs, including decision statements, will be developed for each survey and documented in the related TSP(s). The DQOs will define the data to be collected to support the radiological clearance of buildings, structures, and land areas. Where possible, the survey design will be such that if elevated residual radioactivity is not identified, the collected data set may be used as the final status survey to clear the area radiologically for unrestricted use.
SPECIFIC COMMENTS					
1.	SAP Worksheet #2, Item 6. Add Treasure Island Development Authority (TIDA) as a stakeholder				TIDA has been added as a stakeholder.
2.	SAP Worksheet #3, Distribution List, Page 13. Please remove Scott Warner of AMEC and add the following:				Mr. Christopher Glenn has been added to the table, and Mr. Scott Warner has been removed. Adam Nguyen will be added as Michael Tymoff's replacement.
	Name of SAP Recipient	Title/Role	Organization	Telephone Number	Mailing Address
	Michael Tymoff	Project Director for City of San Francisco	Treasure Island Development Authority (TIDA)	415-749-2488	Treasure Island Development Authority One South Van Ness Avenue, Fifth Floor San Francisco, CA 94103 Michael.Tymoff@sfgov.org
	Christopher Glenn, PE, LEED GA	Consultant to TIDA	Treadwell & Rollo A Langan Company	Direct: 510.874.7074; Mobile: 510.384.2626	Treadwell & Rollo A Langan Company 501 14th Street, 3rd Floor Oakland, CA 94612 cglenn@Langan.com

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REVIEW COMMENTS – AMEC and Treadwell & Rollo, TIDA (on the SAP) dated June 6, 2013		
No.	Comments	Responses
3.	SAP Worksheet #10, Figure 10.1. A legend should be included on the figure. Additionally, there was much discussion on this figure when it was presented in the Draft HRA-STM. TIDA does not believe it is appropriate to include this figure in a final report until there is resolution regarding what areas to show as radiologically impacted.	Figure 10.1 has been revised to show only areas that will be worked on by ITSI Gilbane under its contract with the Navy.
4.	SAP Worksheet #11 - Project Quality Objectives, Section 11.2, Step 2 - Identify the Goal of the Study, Decision Statement, Page 37, First Sentence. The project decision statement should be an "If/Then" statement that clearly states how a decision will be made. Please revise the decision statement to make it clear how suitability is determined (e.g., by linking data results with possible actions).	Appendix D of MARSSIM was used as guidance to develop the DQOs. Section D.2 directs a principal study question be identified. The alternative actions that will result from resolution of the principal study question are presented in the "if/then" format. The principal study question and the alternative actions are then combined to form the decision statement. These elements are all presented in Section 11.2, Step 2.
5.	SAP Worksheet #11 - Project Quality Objectives, Section 11.2, Step 2 - Identify the Goal of the Study, Decision Statement, Pages 36-37: Please reference Table 11.2, Decision Rules, in the text.	A text reference to Table 11.2 is given in Section 11.5, Step 5, for which Table 11.2 was developed.
6.	SAP worksheet #11 - Project Quality Objectives, Section 11.4, Step 4, Table 11.1. It is not clear that the Soil radioactivity screening level for Ra-226 is 1.0 pCi/g above background. Please include the words "above background" in the column header or in the table itself.	Table note b, which states that the Ra-226 value is "above background" has been relocated to a more prominent location in the column header.
7.	SAP Worksheet #11 - Project Quality Objectives, Section 11.5, Step 5 - Develop the Analytic Approach, Table 11.2 - Decision Rules, Page 39: We recommend that the "Statistical Test" decision rules be used to better define the decision statement(s). For example, if the null hypothesis is rejected for the survey unit (i.e., residual	The statistical test rules in Table 11.2 have been deleted and instead replaced with previously agreed-to statistical analytical measures added to Worksheet #14.

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REVIEW COMMENTS – AMEC and Treadwell & Rollo, TIDA (on the SAP) dated June 6, 2013		
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	radioactivity is not greater than Table 11.1 values), then [insert appropriate action]. The decision rule states that if the null hypothesis is rejected, then the Navy may "consider recommending survey unit as suitable to be cleared radiologically for unrestricted use." We recommend using more concrete terminology to better clarify the process for defining a site as suitable to be cleared radiologically for unrestricted use (i.e., what is being considered?). We also recommend more concrete actions be specified if the null hypothesis is accepted. The decision rule states that if the null hypothesis is accepted, then the Navy RPM should be consulted to determine further action. Earlier text states that possible decisions include determination of need for remediation and/or additional data collection. The possible actions and decision process should be defined in the SAP. Also, the other decision rules presented in Table 11.2 (related to gross gamma and beta scan measurements and alpha and beta static measurements) seem to apply more to the collection of data rather than the analytic approach. Please consider moving these rules to Worksheet #11, Step 7.	
8.	Appendix A, SOP, Surface Water: Grab Sampling. The main body of the SAP does not indicate that surface water will be sampled so it is unclear why this SOP is included. If surface water is to be samples, please include reference to this in the appropriate SAP worksheets.	The SOP was included in error and has been removed
MINOR COMMENTS		
1.	SAP Worksheet #10 - Problem Definition, Page 30. Incomplete sentence "The objective of the SAP is to [specify] radiological procedures and methodologies for..."	The missing word 'specify' has been added to the sentence.

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REVIEW COMMENTS – AMEC and Treadwell & Rollo, TIDA (on the SAP) dated June 6, 2013		
No.	Comments	Responses
2.	SAP Worksheet #27 - Sample Custody Requirements, Page 65. This page lists VOC analyses and does not seem relevant to this report.	VOC analyses and related references have been removed.

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REVIEW COMMENTS – Terraphase Engineering, TICD dated May 13, 2013		
No.	Comments	Responses
SPECIFIC COMMENTS		
1.	Activity details were provided in the SWPPP appendix was not provided in the main text. For instance, the SWPPP describes "scoopholes" and "potholes" along waste lines; provides a description of commodity removal (a 1'x1'x0.5' sized scoop to remove commodities); and discusses backfill and compaction of these excavations. These activities are the type of detail that could be applied anywhere on Site and should be incorporated into the main text.	Details of this are provided in the task specific plans.
2.	How will soil beneath the storm/utility drains be scanned?	Soil samples will be collected adjacent to and/or beneath drain piping at locations where cracked or broken piping may have leaked. Localized excavation (e.g., pot holing), direct push (e.g., Geoprobe), directional soil boring, or similar methods will be used to minimize the extent of soil disturbance.
3.	How are the results communicated to the BCT?	Results will be communicated through updates at BCT meetings and in the final report.
4.	Section 1.1 Should an objective be added about the idea of performing screening to eliminate the possibility of impacts or to evaluate for health & safety issues?	As presently configured, the plan focuses on building, structures, and land areas that have been identified as radiologically impacted. The process of determining radiological impact is conducted separately and is outside the plan scope.
5.	Figure 2.1 Figure 2.1 only shows the impacted areas identified in the HRASTM it does not include the impacted areas identified in the original HRA.	Figure 2.1 has been revised to only show areas that will be worked by ITSI Gilbane under its contract.
6.	Section 4.3.1 Will TSPs be submitted to the BCT?	TSPs will be available to the BCT for reference.
7.	Section 9.3	The sentence has been clarified to read, "The process by which the

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REVIEW COMMENTS – Terraphase Engineering, TICD dated May 13, 2013		
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	This section discusses two conclusions that could be drawn from data analysis. The last sentence states that "This process will be described in more detail in the TSPs" - but it is unclear what process this sentence is referring to. Is the process remediation?	data are analyzed and interpreted will be described in more detail in the TSPs."
8.	Section 10 This section discusses remediation. Is this plan meant to cover remediation activities or will a separate work plan be prepared?	This plan is meant to cover remediation activities of surface soil hotspots.
9.	Section 11.2 This section describes that collected storm water may come in contact with contaminated soil and may be used for dust control. Is it ok to use this water that may have come in contact with contaminated soil for dust control?	The provision to use collected water for dust control has been deleted.

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REVIEW COMMENTS – Dale Smith, Naval Station Treasure Island Restoration Advisory Board dated May 15, 2013		
No.	Comments	Responses
REVIEW COMMENTS – Naval Station Treasure Island Restoration Advisory Board dated May 15, 2013		
1.	Given the community concern with adequate sampling for radiological materials, it is disconcerting that the survey units in some places will be one per 59.8ft ² or every 7.74 feet, but in others as large as one per 1,195.94 ft ² or every 34.5 feet. The RAB in the late 1990s asked for surveys in the housing area at every 25 feet out of concern for families and children. It would be preferable to have the surveys at that distance rather than 34.5 feet.	The approach used to size survey units assures the total number of data points enables a statistical evaluation of the data collected, based on the measurement frequency. MARSSIM guidance is used. Survey units are sized to ensure that survey data points are relatively uniformly distributed among areas of similar potential for residual radioactivity. Considerations for establishing survey units are weighted less on physical characteristics such as streets and fence lines, and more on concentration levels and previous remediation efforts. As an example, a small, separate survey unit is created for an area of known residual radioactivity instead of including it in a much larger survey unit where the probability for one or more measurements to be taken in the area of known residual radioactivity is greatly reduced. The survey unit boundaries are refined as additional data are collected.
2.	Power cleaning the sanitary lines would seem to be a logical first step to determine residual contamination in the line. Why isn't this sort of apparatus used first? It should be relatively inexpensive and eliminate easily mobile materials. Then it makes sense to use a gross gamma scintillation detector to determine the areas of residual contamination. Will they be equipped with a robust enough GPS tracking system to locate pockets of contamination without destroying sewer lines unnecessarily? The City of Berkeley uses a remote-controlled rover to move through lines recording breaks and problems, as well as the location of the findings without damaging the lines.	While there are many applications where power cleaning would make sense, it is unnecessary in this instance for two reasons. First, the method of detection that is proposed (gamma detection using a scintillation detector) is largely insensitive to presence of radioactivity in sediment or debris that may be inside the line. Second, by removing the loose material and effectively scrubbing the internal surfaces of the piping, tell-tale indicators of the historical presence of radioactivity may be removed, thus masking the possible need for investigation. Since the pipe lengths to be surveyed are short (less than 15 m), a manual system based on detector lineal distance into the pipe will be used instead of GPS to map detected levels of radiation inside the pipe.
3.	Why not GPS the actual measurement locations rather than use a reference coordinate system of stakes or surface markers? Some	Both GPS and physical markers are used. GPS is routinely used to capture and map locations of site features and sample collection

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No.	Comments	Responses
	investigations likely will be in unrestricted areas, where vandalism could occur destroying or removing the markers.	points. Physical markers are needed to guide surveyors and workers in the field.
4.	For whatever reason detection units vary among equipment manufacturers and detections are recorded in those units. Engineers must recalculate units for the sake of comparison. Why are public documents not recalculated also? It appears to be an attempt to confound the public.	Precision in terminology is important to communicate technical information among workers and stakeholders. However, it is less useful in communicating information to the broader audience that includes the largely non-technical general public. Forums such RAB meetings allow presentations to be made where the information can be meaningfully distilled and presented without the burden of extensive technical detail. Questions asked by RAB members and members of the general public gauge interest and drive the presentation of additional detail, including salient technical information. The Navy is committed to ensuring this process is effective and efficient.
5.	Please clarify waste management handling. The document appears to state that stormwater collected from active remediation areas, decontamination areas and storage areas may be used for dust suppression and only treated and sampled after such use. This would compound contamination in excavated soils.	The language has been revised to remove the provision for collected stormwater to be used for dust control.
6.	In the Sampling and Analysis Plan Section 9 item K it states “Danielle – collection of data-CDPH- surveys to support public concern. She will get us this data.” What does this mean?	Section 9 of the SAP includes meeting minutes from a kick-off meeting. This text was stated during that meeting and is therefore reflected in the minutes.
7.	Later in section P it appears text is missing. The document states ”ITSI Gilbane will be required to have a State of California radioactive materials license. Treasure Island requires one and the State will soon be at Hunters Point Naval Shipyard (HPNS). The lag time is 6 months for Radiologic Health Branch (RHB) to issue license.” Why is CDPH setting up an office at Hunters Point? Have remediation’s failed and the CDPH need to be on site to review previous activities as at Treasure Island?	See response to comment #6 CDPH is not setting up an office at HPNS.

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8.	Ms. Remedios Sunga is a well-regarded female remedial engineer and should be addressed appropriately.	The Navy apologizes this for this typo.
9.	It is preferable not to break compound verbs with adverbs.	Comment noted, the document will go through the appropriate quality control processes.